Trans-Lake Washington Project
Washington State Department of Transportation
Sound Transit

MEETING SUMMARY

TRANS-LAKE WASHINGTON PROJECT
ALL-COMMITTEE WORKSHOP
OVERLAKE HOSPITAL CONFERENCE CENTER OFFSITE ANNEX, BELLEVUE, WA
JUNE 6, 2001 — 9:30 A.M. – 3:30 P.M.

INTRODUCTION, WELCOME, AND AGENDA REVIEW

Pat Serie, EnviroIssues, reviewed the agenda, which was revised as follows. The transportation performance of the multi-modal alternatives would be reviewed first, followed by the alternative transit technology assessment results. The alignment assumptions would then be reviewed, followed by the cost evaluation opinions.

TRANSPORTATION PERFORMANCE

Jeff Peacock, Parametrix, presented the transportation performance data for the multi-modal alternatives. He reminded the committee members that the transportation results reflect performance of the combinations of the roadway options with high capacity transit (HCT) in the SR 520 corridor or light rail in the I-90 corridor. The performance results presented are at a big picture level, cumulatively assessing results for all trans-lake travel (combining both the I-90 and SR 520 corridors). Transit mode share, transit performance, and HCT alternatives are included. Operations details for the SR 520 corridor will be looked at in detail in the June 13, 2001, workshop, including local arterials impacts on 6- and 8-lane and no action alternatives. Details of environmental impacts will also be discussed on June 13.

Jeff Peacock reviewed the performance results for the following criteria:

- Person throughput
- Traffic volumes –
  - Daily volumes – SR 520 and I-90
  - Morning Peak period GP – SR 520 westbound and eastbound
  - Morning Peak period HOV - SR 520 westbound and eastbound
- Mode share
- Transit ridership
- HCT Boardings
- Vehicle miles traveled (VMT) and vehicle hours traveled (VHT)

In general, the results have shown that a greater capacity improvement will indicate a greater number of people moving across the lake. Most of the growth in person throughput will be in HOV and transit. Commercial and general purpose trips would grow in off peak periods.

Jeff called attention to the conclusions that were drawn for each of the criteria above.

Discussion about the transportation performance yielded the following questions and points:

- Daily traffic counts take into consideration the accidents that occur on a day-to-day basis, but those differences will be less apparent when taken on an annualized basis.

- A 23% increase in person throughput across the lake represents 100,000 people.

- The difference between alternatives 4 and 8 was that alternative 4 assumes light rail transit (LRT) on I-90 with the HOV and GP lanes on SR 520; Alternative 8 assumes the bus rapid transit (BRT)/HOV lane on SR 520 for safety, with 2-way HOV assumed for I-90 with no light rail component.

- Bus rapid transit is assumed for SR 520 in alternatives 7 and 8, though expectations are that bus performance would be similar on I-90.

- Why does the no action alternative have more person throughput than alternative 2?

- Regional models have been validated within 10% of actual observed conditions.

- Traffic volumes show that transit and HOV are playing a larger role in the future.

- A surprising finding is that vehicle trip growth increases at a substantial rate regardless of whether HCT is added to one of the corridors.

- Alternatives 2,3, and 4 assume LRT on I-90 with an additional lane in each direction on the outer roadway. Alternatives 5-8 assume dedicated two-way transit operations on the I-90 center roadway.

- Person throughput and vehicle throughput are described for a mid-lake screen line on both corridors, based on assumptions about improvements on SR 520 and I-90. Capacity limit for a GP lane on this type of facility is about 2200 vehicles per hour, though this might be reduced during peak hours because of congestion.

- Jeff Peacock distinguished between excess capacity and person and vehicle throughput. Estimated throughput is the use determined by the models, limited by the capacity of the facility. He stated that HCT would continue to have excess capacity even when ridership is high, since capacity can be increased by adjusting train lengths and headways. Highway alternatives, on the other hand, will reach their limit when they are filled to capacity – there will be no potential for carrying more people.

- A request was made for data on the total transit ridership or person trips using individual modes, as well as throughput data at different screenlines along the corridor, such as at Montlake. Jeff Peacock stated that this will be appropriate to provide when looking at SR 520 operational performance, and the team will provide the information.

- The limited capacity of I-5 becomes apparent as the operation of SR 520 is looked at specifically.

- The latent demand for cross-lake travel will fill additional capacity immediately regardless of whether that new capacity is HOV or GP. Jeff Peacock agreed that the latent demand represents trips not made because the facility is filled. It points to the need for the process to take a look at transportation demand management (TDM) and figure out how to satisfy the demand.

- It was suggested that the graphs show a latent demand for driving, but not as much demand for transit trips. King Cushman, PSRC, countered that recent work with the regional model has been underestimating the transit demand.

- Mode share is caused primarily because of reliability and travel time.

- It was suggested that transit on the peak hour travel time also be shown, as transit and HCT are particularly effective in the peak hours. Transit results as a percentage of total daily trips do not speak to the use during peak hours.

- At the end of the 2020 modeling horizon, HCT continues to offer a large amount of unfilled capacity.

- There is not a significant difference between the fixed guideway and bus rapid transit performance. BRT demonstrates possibilities for more point-to-point service and shorter travel times.

- Investment in HCT shows an increase in daily transit use of 25% over no action for either BRT or light rail. It was suggested that peak hour increases in transit trips be shown.

- The transit analysis does not clearly demonstrate the corridor in which HCT service would be most effective. Operational issues and levels of support will be key factors in determining a corridor.

- Significant differences in long-term capacity will result from the investment made. Creating a facility that has a large amount of excess capacity may result in use of only 50% during peak hours, and as low as 33% during off-peak. In other places around the country where transit systems have been developed in areas of constrained highway capacity, the largest growth has been around the transit system. That has eventually shifted land-use and growth patterns. King Cushman pointed out that this has happened in the north I-5 corridor, where transit and HOV service have grown, and single occupant vehicles (SOVs) account for only 55% of the traffic.

- The Trans-Lake corridor rates third in the region for applicability of transit service, after the I-5 North and I-5 South corridors.

- Land-use patterns show that transit will focus on people living on the eastside commuting to Seattle for work.

Jim Parsons, Puget Sound Transit Consultants, reviewed the conclusions drawn for HCT on SR 520, LRT on I-90, and BRT.

- It was suggested that the modeling would not show the operating characteristics and flaws of each of the transit options.

- King Cushman stated that an all-bus system will require major investments in downtown Seattle, as well as in the University District. The capacity in the peak hour in the bus tunnel will be more than doubled. The operations in the major activity centers may be a fatal flaw for an all-bus system.

- The question was raised about when in the process the operational flaws of such systems will become apparent.

- Jim Parsons stated that if the light rail line is completed from south of South 200th Street to Northgate, then in theory enough buses could be removed from downtown by 2020 to handle additional bus service from other corridors, assuming there is no growth. The limited growth capacity of bus systems was highlighted here.

- Don Billen, Sound Transit, noted that the alternatives have been defined exclusively as BRT or fixed guideway systems. There is also an opportunity for combining these options.

- A fixed guideway system will offer the most capacity for growth for trans-lake travel. The choice between I-90 and SR 520 will have to be based on more than the modeling runs, and include criteria such as impacts, community support, costs, and operations.

- Capacity constraints of fixed guideway systems are train length and headway. As long as the investment is made to enable increasing these, the capacity can be increased easily.

- Long-term choices for having HCT in both corridors will driven by how far the community will look ahead, and how far investments into the future will be made – at what prices and investment levels. Transit ridership now does not necessitate two transit corridors.

- The question was asked whether HCT on the SR 520 corridor will be precluded if it is not placed on the bridge as a result of this process, and would that be one of the factors for the committees to consider besides its effectiveness. Jim Parsons stated that it is a long-term policy choice that the region needs to make, based on impending need. The provision can be made if justification can be made for not using it until the system is completed. If the provision is made and an interim highway use is proposed as with I-90, then it will be difficult to convert that use to its intended purpose.

HCT TECHNOLOGY OPTIONS

Barbara Gilliland, Sound Transit, introduced Hal Henderson of Parsons Brinckerhoff, who would be presenting results of the Sound Transit Alternative Transit Technology Assessment (ATTA).

She stated that originally the assessment was envisioned to look at packages that combined vehicles, propulsion systems, guideways, though it was realized that the components of the systems could be looked at independently, and pieces mixed together. The final ATTA report will be completed for Sound Transit by the end of June 2001. The presentation focus was on information that is applicable to the Trans-Lake Washington Project.

Hal Henderson stated that his presentation is not criticism or praise of existing systems, and that the purpose of the presentation is not to choose a technology to apply to the Trans-Lake corridor. The key issue is determining which technology may fit the situation, based on criteria of capacity, potential for growth, speed, and lifecycle costs, including capital costs, operations and maintenance, and efficiency.

He reviewed the characteristics of the following technologies, including seating design and options, train lengths, headways:

- BRT
- People Movers
- Monorail
- Skytrain
- Light rail vehicles (LRV)
- Diesel Multiple Unit (MU)
- Rapid Transit
- Commuter Electric Multiple Unit (EMU)
- Locomotive-Hauled Commuter

The following vehicles were not considered in the study:

- Personal Rapid Transit (PRT)
- High speed rail
- MagLev

In summary, a four-minute headway was assumed for the basic technologies. The question is one of the ability for growth given the headway. Rubber tires are assumed on all of the basic technologies. LRV conventionally can carry the needed capacity with two cars, but could be expanded to four cars as necessary.

LETTER

Fred McConkey, Town of Hunts Point, read a letter sent to Aubrey Davis. He commended the staff for an excellent job done on the project thus far. The groundwork laid has turned a lot of the attitude in the Points Communities around to support increased capacity for the region and the residents of Hunts Point. He noted however that capacity decisions may be easy on the global level, but that the corridor does come directly through the Hunts Point neighborhood. He suggested that the alignment be refined and moved 20-30 feet in order to save homes and impacted environmental areas, and that lids and enhancements be tied together with the alternatives before the decision on the EIS alternatives on June 27, 2001.

ALIGNMENT CONSIDERATIONS

Jeff Peacock reviewed the challenges and constraints along the entire alignment:

- Urban corridor
- Neighborhoods/residential areas adjacent to existing ROW
- Close interchanges
- Over 1/3 corridor length on bridges;
- Sensitive natural areas throughout the corridor
- Need to maintain traffic on regional corridor

Basic assumptions framed the problem:

- Endeavor to maintain two lanes of traffic in each direction at all times during constructions;
- Minimize traffic closures of Evergreen Point Bridge to fullest extent possible during constructions;
- Maximize local access into communities;

Jeff Peacock stated that the basic alignment will not change, but that the width of the facility will change. Various alignment options were considered, including widening and shifting the roadway north or south throughout the corridor.

Given the expense for a seismic retrofit of the Portage Bay viaduct relative to replacement, and the considerations for maintaining traffic, it appears necessary to replace that structure. An environmentally sensitive area exists on the south shoreline. An alignment to the north in Portage Bay would have the advantages of being more environmentally friendly in its location relative to the shoreline and the fewer number of columns, and enable the completion of the structure while maintaining the old one. It would also allow the straightening of the reverse curves as the road moves eastward. Takes in Montlake would be institutional rather than residential, and connections would become more straightforward.

As the roadway approaches the east side of the lake, the alignment would move as quickly as possible into the existing right-of-way. The maximum build scenario has been shown in the diagrams, and the team feels relatively comfortable that the worst-case scenario is being represented. The alignment will be further tweaked and refined to further avoid and minimize impacts as the process moves along.

Next steps for the alignment considerations are to:

- Consider adjusting the alignment based on the multi-modal alternatives that advance to the EIS.
- Avoid and minimize impacts where possible.
- Understand interchange layouts, as they are very significant in understanding alignment.

Jeff stated that the final alignment details will be finalized only in the draft EIS, and subject to further adjustment in the final EIS.

Questions and comments about the alignment include the following:

- A question was asked about whether BRT/HCT needs were taken into account in making alignment decisions. These decisions will affect other assumptions throughout the corridor. Jeff Peacock stated that the curvature is still a big issue, especially for fixed guideway facilities, and that general assumptions were made about station locations for modeling predictions.

- A suggestion was made to consider creating two bridges, enabling reuse of the existing corridor after the first one is built. Jeff Peacock stated that the team has concluded that it is best to assume a single bridge at this point, though it is a very big question with cash flow and financing.

- Aerial information and interchanges still under consideration will be available.

- East side alignments and interchanges will have more issues with constructibilty because of changes in elevation.

- Information about how I-90 was constructed should be made available – perhaps someone from WSDOT can speak to it.

- The I-405 interchange will be difficult: the team has not figured out a way to accommodate the I-405 expansion, the SR 520 expansion, and direct HOV connections in all directions. Rob McKenna, King County Council, stated that the I-405 study will not propose expansion of two GP lanes the length of the corridor, and that expansion may not affect the I-405/SR 520 interchange.

- Only SR 520 changes and growth are being shown, without the plans for I-405.

- FHWA has stringent guidelines for access and interchanges from other facilities.

- Segments of the roadway such as in Redmond may not be fully widened, given the constraints of Bear Creek and Marymoor Park.

COST SUMMARY

Jeff Peacock reviewed the cost summary, outlining capital cost opinions, annual, lifecycle, operations and maintenance, and private costs. Capital costs do not include mitigation and enhancement costs, but do include all SR 520 and I-90 improvements.

The TDM cost opinion was based on annualized base costs, in order to help paint a picture of the lifecycle costs. Jeff Peacock stressed that TDM investments are needed to ensure or exceed HOV and transit forecasts, except under no action. Investment in each alternative is proportional to the HOV/transit forecasts.

Discussion yielded the following points and questions:

- Clarify that the costs do not include mitigation and enhancement, though the alternative descriptions state that mitigation and enhancement are included as part of the alternative.

- The BRT roadway is included in highway costs, and it was suggested that this may be unintentionally deceptive.

- It may be helpful to have the costs spread out annually to get a better comparison with annual throughput.

- Private costs of vehicles and facilities are included in the cost information.

- Lower and extreme upper ranges have been identified for mitigation and enhancement costs. These include noise walls, storm water treatment, local street improvements, environmental mitigation, and lids. Assumptions have been made for each. Storm water treatment represents a significant cost. Mitigation cost assumptions have been based on a percentage of capital costs.

- Legally required mitigation includes noise and storm water treatment. Environmental mitigation is required, and it may also prove beneficial for the project in other ways. Lids are purely enhancements. Local street improvements are a gray area between requirements and optional enhancements.

- Contingency plans are included: 15% has been added to individual elements of capital costs, and another 20% has been added in total.

- Freight TDM has not been looked at, and it was suggested that freight TDM be considered.

- Transportation pricing is still being developed, though it will be considered outside the rest of the TDM work.

- Peter Dewey, University of Washington, stated that spending $9 million per year on TDM is appallingly low, considering the UW spends the same amount per year on its TDM program. Metro's budget is about $400 million per year.

- A suggestion was made to consider an incentive not to use the bridge, such as paying people, as the money will be spent either in constructing the facility or paying not to use it.

- A revenue stream generated primarily by people who use the facility will be looked at in a more formal evaluation process.

- The I-405 study committees asked that the TDM package be more aggressive, and that proposed funding for it be doubled.

- Private costs are directly proportional to vehicle hours traveled (VHT) and vehicle miles traveled (VMT). VMT can be considered either good or bad depending on the argument made. VMT increases by 32% under no action, and VHT by 90%.

- Annual private costs include the cost of owning and operating a vehicle. Annual costs are derived from modeled VMT at the rate of $0.39/mile for cars and $1.29/mile for trucks. It is assumed that 95% of the traffic is automobiles.

- Induced demand is growing at most by 2.7%. Though this figure may be accurate on a regional level, the corridor level may see increased pressure because of the importance of east-west travel across the lake. Induced demand does not figure into the models, and is still an academic argument.

- Operations and maintenance costs are incremental over no action, and do not include farebox recovery. Highway operations and maintenance costs do not include private costs.

- Lifecycle costs look at capital costs over the entire useful life of the facility, with 30 years being used for the analysis. No financing costs are included.

- Capital costs include both road and transit costs.

- Existing investments are assumed to be maintained in their current state.

- Lifecycle of track/rail cars and buses are distinguished in the cost analysis.

- The difference in financing alternatives will be greater than the cost differences between the alternatives themselves.

- Cost information is stated for both the SR 520 and I-90 corridors.

- SR 520 has the same eligibility for federal funding as interstate highways as a result of changes in the national highway system designation.

- Capital costs include all identified parts of the alternatives, as well as assumptions for park and rides and transit centers to support the system.

- Daryl Grigsby summarized that the costs would range between $4.4 billion for the cheapest alternative with the least mitigation, and $15 billion for the most expensive alternative with the most extensive mitigation.

- It was suggested that the assumptions on I-90 should be revisited in detail, especially if the I-90 corridor will not be included in the Trans-Lake EIS. Jeff Peacock stated the issue will influence the recommendations with which the team comes forward.

MEETING HANDOUTS

- Agenda
- Alignment Considerations, presentation, June 6, 2001
- Transportation Performance, presentation, June 6, 2001
- Cost Summary, presentation, June 6, 2001
- High Capacity Transit Technology Options, presentation, June 6, 2001
- Multimodal Alternatives Evaluation Report, committee discussion draft
- Letter from Fred McConkey, Mayor, Hunts Point, June 6, 2001

ACTION ITEMS

- Show peak hour increase in transit trips. (25% over no action on daily basis).

MEETING ATTENDEES

Executive Committee Members

Present	Name		Organization
	Becker	Daniel	City of Medina
	Berry	Jeanne	Town of Yarrow Point
	Cairns	Bryan	City of Mercer Island
	Clarke	Chuck	City of Seattle
	Conlin	Richard	City of Seattle
	Crawford	Jack	Sound Transit Board
	Davis	Aubrey	Washington Transportation Commission
	Earling	Dave	Sound Transit Board
	Edwards	Bob	Puget Sound Regional Council
	Hughes	Gary	Federal Highway Administration
	Ganz	Nona	City of Kirkland
	Gehrke	Linda	Federal Transit Administration
	Grigsby	Daryl	City of Seattle
	Horn	Jim	Washington State Senate
	Ives	Rosemarie	City of Redmond
	Jacobsen	Ken	Washington State Senate
	Marshall	Connie	City of Bellevue
	Martin	George	City of Clyde Hill
	McConkey	Fred	Town of Hunts Point
	McIver	Richard	City of Seattle
	McKenna	Rob	King County Council
	Murray	Ed	WA State House of Representatives
	Noble	Phil	City of Bellevue
	Okamoto	John	WSDOT - NW Region
	Pflug	Cheryl	WA State House of Representatives
	Sullivan	Cynthia	King County Council
	Taniguchi	Harold	King County Department of Transportation

Executive Committee Alternates

Present	Name		Organization
	Asher	David	City of Kirkland
	Bowman	Jennifer	Federal Transit Administration
	Drais	Dan	FTA
	Carpenter	Trish	Town of Hunts Point
	McKenzie	Jack	Town of Hunts Point
	Creighton	Mike	City of Bellevue
	Demitriades	Paul	City of Medina
	Dye	Dave	WSDOT - NW Region
	Earl	Joni	Sound Transit
	Hague	Jane	King County Council

Jahncke	El	City of Mercer Island
Conrad	Richard	City of Mercer Island
Kargianis	George	Washington Transportation Commission
Paine	Thomas	City of Redmond
Rourke	Philip	City of Clyde Hill
Rutledge	Steve	City of Yarrow Point
Switaj	Ed	City of Seattle

Technical Committee Members

Present	Name		Organization
	Arndt	Jim	City of Kirkland
	Billen	Don	Sound Transit
	Bowman	Jennifer	Federal Transit Administration
	Brooks	Allyson	Washington State Office of Archaeology and Historic Preservation
	Conrad	Richard	City of Mercer Island
	Cushman	King	Puget Sound Regional Council
	Dewey	Peter	University of Washington
	Fisher	Larry	Washington State Department of Fish and Wildlife
	Gibbons	Tom	National Marine Fisheries Service
	Kennedy	Jack	U.S. Army Corps of Engineers
	Kenny	Ann	Washington Department of Ecology
	Kircher	Dave	Puget Sound Clean Air Agency
	Leonard	Jim	Federal Highway Administration
	Marpert	Terry	City of Redmond
	Martin	Ann	King County Department of Transportation
	Newstrum	Len	Town of Yarrow Point
	Rave	Krista	U.S. Environmental Protection Agency
	Pratt	Austin	U.S. Coast Guard, 13th District
	Sanchez	Susan	City of Seattle
	Schulze	Doug	City of Medina
	Sparrman	Goran	City of Bellevue (Bernard van de Kamp)
	Sullivan	Maureen	WSDOT – NW Region
	Teachout	Emily	U.S. Fish and Wildlife Service
	Wasserman	Mitch	City of Clyde Hill
	Willis	Joe	Town of Hunts Point

Advisory Committee Members

Present		
	Amick	Jean
	Andrews	Deborah
	Aschenbach	Hans
	Beltz	Allison
	Culp	Barbara
	Dent	Bob
	Eades	Bertha
	Gatchet	Dan

Gunby	Virginia
Hallenbeck	Mark
Hart	Fred
Hill	Jim
Hill	Gregory
Holman	Linda
Hurley	Peter
Joneson	Kingsley
Leed	Jean
MacIsaac	Jim
Newstrum	Elizabeth
Odell	Nina
Ray	Janet
Reckers, Jr.	James
Resha	John
Sheck	Ronald
Stelle	Claudia
Tate	Bob
Tochterman	Thomas B.
Wasserman	Eugene
Weed	Mark
White	Rich
White	Roland
Wyble	John

Other attendees

Project Team

Les Rubstello, WSDOT
Rob Fellows, WSDOT
Barbara Gilliland, Sound Transit
Jeff Peacock, Parametrix
Pat Serie, EnviroIssues
Amy Grotefendt, EnviroIssues
Paul Hezel, EnviroIssues

PJH